CLAIMS

1. Adjuster for the vertical adjustment of a head restraint (1, 2)
with a head restraint holding module (20) for holding the head restraint (1, 2),
whereby the head restraint holding module (20) comprises adjustment means (4) variable in at least one adjustment direction (A) for the vertical adjustment of the head restraint (1, 2) held by head restraint holding module (20) and
with drive means (8) for producing an adjustment movement for moving the adjustment means (4),
characterized in that the drive means (8) are arranged spatially separate from the head restraint holding module (20) and
in that transmission means (6, 7; 16) for transfer of the adjustment movement of the drive means (8) to the adjustment means (4) are provided.

2. Adjuster according to claim 1, characterized in that the drive means (8) comprise an electric motor (10) for producing the adjustment movement.

3. Adjuster according to claim 1 or 2, characterized in that the drive means (8) comprise a gear mechanism (11, 12) for transfer of the adjustment movement to the transmission means (6, 7; 16).

4. Adjuster according to any one of the preceding claims, characterized in that the transmission means (6, 7; 16) are flexibly formed.

5. Adjuster according to any one of the preceding claims, characterized in that the transmission means (6, 7; 16) comprise exactly one transmission element for transfer of the adjustment movement of the drive means (8) to the adjustment means (4).

6. Adjuster according to any one of the preceding claims, characterized in that the transmission means comprise at least one Bowden cable (6, 7).

7. Adjuster according to any one of the preceding claims, characterized in that the transmission means (6) is designed such that it can transfer a force to the adjustment means (4) for movement of the adjustment means (4) in a first adjustment direction, and that the head restraint holding module (20) comprises mechanical energy storage means (15) coupled with the adjustment means (4), which are designed such that they can take up energy on movement of the adjustment means (4) in the first adjustment direction, in order to assist movement of the adjustment means (4) in a second adjustment direction by releasing the stored energy.

8. Adjuster according to claim 7, characterized in that the first adjustment direction is essentially opposite to the second adjustment direction.

9. Adjuster according to claim 7 or 8, characterized in that the mechanical energy storage means (15) are flexibly formed.

10. Adjuster according to any one of claims 7-9, characterized in that the mechanical energy storage means comprise spring means (15).

11. Adjuster according to claim 10, characterized in that the spring means (15) are coupled with the adjustment means (4) in such a manner that it is tensioned on movement of the adjustment means (4) in the first adjustment direction, while it assists the movement of the adjustment means (4) in the second adjustment direction by a slackening action.

12. Adjuster according to claim 10, characterized in that the spring means (15) are coupled with the adjustment means (4) in such a manner that they are compressed on movement of the adjustment means (4) in the first adjustment direction, while they assist the movement of the adjustment means (4) in the second adjustment direction by a decompression action.

13. Adjuster according to any one of claims 7-12, characterized in that the mechanical energy storage means (15) are arranged on at least one support bar (2), which on the one hand is to be coupled with the head restraint (1) and on the other hand with the adjustment means (4).

14. Adjuster according to any one of the preceding claims, characterized in that the transmission means comprise at least one shaft (16) for transfer of the adjustment movement of the drive means (8) to the adjustment means (4).

15. Adjuster according to claim 14, characterized in that the at least one shaft (16) is coupled with the adjustment means (4) in such a manner that a rotational motion transferred by the drive means (8) to the at least one shaft (16) causes a linear adjustment movement of the adjustment means (4).

16. Adjuster according to claim 14 or 15, characterized in that a final section of the at least one shaft (16) to be coupled with the adjustment means (4) via a thread engagement forms a spindle drive for the adjustment means (4).

17. Adjuster according to claim 16, characterized in that the final section of the least one shaft (16) has a thread (17), which is to be engaged with a thread formed on the adjustment means (4), in order to form the spindle drive.

18. Adjuster according to anyone of claims 14-17, characterized in that the at least one shaft (16) is a flexible shaft.

19. Adjuster according to anyone of the preceding claims, characterized in that the adjuster comprises an actuation device (9) for operation of the drive means (8).

20. Adjuster according to any one of the preceding claims, characterized in that several transmission means (6) are provided for transfer of the adjustment movement of the drive means (8) to the adjustment means (4).

21. Adjuster according to claim 20, characterized in that several transmission means (6) transfer the adjustment movement of the drive means (8) to the adjustment means (4) in the vicinity of support elements (2) of the head restraint (1).

22. Adjuster according to claim 21, characterized in that a separate transmission means (6) and separate adjustment means (4) are assigned to each support element (2) of the head restraint (1), whereby each transmission means (6) transfer the adjustment movement of the drive means (8) to the corresponding adjustment means (4).

23. Adjuster for the vertical adjustment of a head restraint (1, 2), with a head restraint holding module (20) for holding the head restraint (1, 2), whereby the head restraint holding module (20) comprises adjustment means (4) variable in at least one adjustment direction (A) for the vertical adjustment of the head restraint (1, 2) held by the head restraint holding module (20) and with drive means (8) for producing an adjustment movement for moving the adjustment means (4), characterized in that the head restraint holding module (20) comprises mechanical energy storage means (15) coupled with the adjustment means (4), which are designed such that they can take up energy on movement of the adjustment means (4) in a first adjustment direction, in order to assist a movement of the adjustment means (4) in a second adjustment direction by releasing the stored energy.

24. Adjuster according to claim 23, characterized in that the first adjustment direction is essentially opposite to the second adjustment direction.

25. Adjuster according to claim 23 or 24, characterized in that the mechanical energy storage means (15) are flexibly formed.

26. Adjuster according to any one of claims 23-25, characterized in that the mechanical energy storage means comprise spring means (15).

27. Adjuster according to claim 26, characterized in that the spring means (15) are coupled with the adjustment means (4) in such a manner that they are tensioned on movement of the adjustment means (4) in the first adjustment direction, while they assist the movement of the adjustment means (4) in the second adjustment direction by a slackening action.

28. Adjuster according to claim 26, characterized in that the spring means (15) are coupled with the adjustment means (4) in such a manner that they are compressed on movement of the adjustment means (4) in the first adjustment direction, while they assist the movement of the adjustment means (4) in the second adjustment direction by a decompression action.

29. Adjuster according to any one of claims 23-28, characterized in that the mechanical energy storage means (15) are arranged on at least one support bar (2), which on the one hand is to be coupled with the head restraint (1) and on the other hand with the adjustment means (4).

30. Adjuster according to any one of claims 23-29, characterized in that the adjuster is formed according to any one of claims 1-22.

31. Adjuster for the vertical adjustment of a head restraint (1, 2), with a head restraint holding module (20) for holding the head restraint (1, 2), whereby the head restraint holding module (20) comprises adjustment means (4) variable in at least one adjustment direction (A) for vertical adjustment of the head restraint (1,2) held by the head restraint holding module (20), and with drive means (8) for producing an adjustment movement for moving the adjustment means (4), characterized in that several transmission means (6), which in each case transfer the adjustment movement of the drive means (8) to the adjustment means (4), are provided.

32. Adjuster according to claim 31, characterized in that the several transmission means (6) are designed such that in each case they transfer the adjustment movement of the drive means (8) essentially in the same direction to the adjustment means (4).

33. Adjuster according to claim 31 or 32, characterized in that the several transmission means (6) in each case transfer the adjustment movement of the drive means (8) to the adjustment means (4) in the vicinity of support elements assigned to the head restraint (1).

34. Adjuster according to claim 33, characterized in that several adjustment means (4) are provided, whereby an adjustment means (4) and a corresponding transmission means (6) are assigned to a supporting element (2) of the head restraint (1) in each case.

35. Adjuster according to one of claims 31-34, characterized in that mechanical energy storage means (15) are coupled with the adjustment means (4), which mechanical energy storage means are designed such that they can take up energy on movement of the adjustment means (4) in a first adjustment direction, in order to assist movement of the adjustment means (4) in a second adjustment direction by releasing the stored energy.

36. Adjuster according to claim 35 and any one of claims 33 or 34, characterized in that the support elements are support bars (2) assigned to the head restraint (1) and that the mechanical energy storage means comprise spring means (15), whereby a spring means (15) is arranged on a support bar (2) in each case.

37. Adjuster according to any one of claims 31-36, characterized in that each transmission means comprises a Bowden cable (6).

38. Adjuster according to any one of claims 31-37, characterized in that the adjuster is formed according to any one of claims 1-30.

39. Adjuster for the vertical adjustment of a head restraint (1, 2) with at least two support elements (2), with at least two holding modules (20), whereby each of the at least two holding modules (20) is in each case associated with one of the at least two support elements (2) and is designed to accommodate the same, whereby each of the holding modules (20) comprises adjustment means (4), which can be moved in at least one adjustment direction for the vertical adjustment of the support element (2) accommodated in the respective holding module (20), and whereby the adjustment means (4) of the at least two holding modules (20) are at a distance from one another and with drive means (8) for producing an adjustment movement to move the adjustment means (4).

40. Adjuster according to claim 39, characterized in that the drive means (8) are arranged spatially separate from the at least two holding modules (20).

41. Adjuster according to claim 39, characterized in that the drive means (8) are positioned between the at least two holding modules (20).

42. Adjuster according to any one of claims 39 to 41, characterized in that the transmission means (6, 7; 6A) are provided for transferring the adjustment movement of the drive means (8) to the adjustment means (4).

43. Adjuster according to claim 42, characterized in that the drive means (8) comprise a gear mechanism (11, 12) for transfer of the adjustment movement to the transmission means (6, 7, 6A).

44. Adjuster according to claim 42 or 43, characterized in that the transmission means (6, 7; 6A) are flexibly designed.

45. Adjuster according to any one of claims 42-44, characterized in that separate transmission means (6, 7, 6A) are associated with each of the at least two holding modules (20).

46. Adjuster according to claim 45, characterized in that the transmission means comprise common transmission means (6) for transfer of the adjustment movement of the drive means to distribution means (22), whereby the distribution means (22) are designed in such a manner that they transfer the adjustment movement from the common transmission means (6) to the separate transmission means (6A) to the same extent.

47. Adjuster according to any one of claims 42-46, characterized in that the transmission means comprise at least one Bowden cable (6, 7, 6A).

48. Adjuster according to any one of claims 39-47, characterized in that the drive means (8) are formed in such a manner that they can transfer a force to the adjustment means (4) for movement of the adjustment means (4) in a first adjustment direction, and that the at least two holding modules (20) comprise mechanical energy storage means (15) coupled with the respective adjustment means (4), which are formed in such a manner that they can take up energy on movement of the respective adjustment means (4) in the first adjustment direction, in order to assist movement of the respective adjustment means (4) in a second adjustment direction by releasing the stored energy.

49. Adjuster according to claim 48, characterized in that the first adjustment direction is essentially opposite to the second adjustment direction.

50. Adjuster according to claim 48 or 49, characterized in that the mechanical energy storage means (15) are flexibly formed.

51. Adjuster according to any one of claims 48-50, characterized in that the mechanical energy storage means comprise springs (15).

52. Adjuster according to claim 51, characterized in that the springs (15) are coupled with the adjustment means (4) in such a manner that they are compressed on movement of the respective adjustment means (4) in the first adjustment direction, while they assist the movement of the respective adjustment means (4) in the second adjustment direction by a release action.

53. Adjuster according to claim 51, characterized in that the springs (15) are coupled with the respective adjustment means (4) in such a manner that they are compressed on movement of the respective adjustment means (4) in the first adjustment direction, while they assist movement of the respective adjustment means (4) in the second adjustment direction by a decompression action.

54. Adjuster according to any one of claims 48-53, characterized in that the mechanical energy storage means (15) are arranged on the at least two support elements (2).

55. Adjuster according to any one of claims 39-54, characterized in that the at least two holding modules (20) with the respective adjustment means (4) are arranged at a distance from one another in such a way that an area is essentially kept free between the at least two holding modules (20).

56. Seat with a head restraint (1, 2), characterized in that the seat comprises an adjuster according to any one of the preceding claims for the vertical adjustment of the head restraint (1, 2).